

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 1 and 9 and ADD claims 17-19 in accordance with the following:

1. (currently amended) A robot system, comprising:

a movable arm including a plurality of links and a wrist connected by joints and controlled by a robot controller having a software processing function; and

a cutting tool unit mounted on said wrist at a distal end of said movable arm, and having ~~an-a cutting~~ effecting end point biased with a radial offset with respect to a final rotational axis of said wrist and directed to said final rotational axis.

2. (cancelled)

3. (withdrawn) A robot system comprising:

a movable arm including a plurality of links connected by joints and controlled by a robot controller having a software processing function; and

a tool unit mounted on a distal end of said movable arm and having an effecting end and a variable axis varying a position or a direction of said effecting end with respect to a final rotational axis of said movable arm.

4. (withdrawn) A robot system according to claim 3, wherein said variable axis includes a linear axis.

5. (withdrawn) A robot system according to claim 4, wherein said linear axis allows said effecting end to move perpendicularly or parallel to said final rotational axis.

6. (withdrawn) A robot system according to claim 3, wherein said variable axis includes a rotary axis.

7. (withdrawn) A robot system according to claim 3, wherein a linear axis and a rotary axis are provided, each functioning as said variable axis.

8. (withdrawn) A robot system comprising:

a movable arm including a plurality of links connected by joints and controlled by a robot controller having a software processing function; and

a tool unit mounted on a distal end of said movable arm, and having an additional rotation axis biased with respect to a final rotational axis of said movable arm and an effecting end biased with respect to said additional rotation axis and directed to said additional rotation axis.

9. (currently amended) A method of machining a cylindrical workpiece with a robot system comprising a movable arm including a plurality of links and a wrist connected by joints and controlled by a robot controller having a software processing function, a cutting tool unit mounted on said wrist at a distal end of said movable arm, and having ~~an~~ a cutting effecting end point biased with a radial offset with respect to a final rotational axis of said wrist and directed to said final rotational axis, said method comprising:

(a) arranging the workpiece so that a central axis of the workpiece is aligned with the final rotational axis of said wrist; and

(b) rotating said final rotational axis to perform cutting machining on the workpiece.

10. (cancelled)

11. (withdrawn) A method of machining a pipe-like workpiece with a robot system comprising a movable arm including a plurality of links connected by joints and controlled by a robot controller having a software processing function, and a tool unit mounted on a distal end of said movable arm and having an effecting end and a variable axis for varying a position or a direction of said effecting end with respect to a final rotational axis of said movable arm, said method comprising the steps of:

(a) arranging the workpiece so that a central axis of the workpiece is aligned with the final rotational axis of said movable arm; and

(b) rotating said final rotational axis to perform machining on the workpiece.

12. (withdrawn) A method of machining a cylindrical workpiece according to claim 11, wherein said variable axis includes a linear axis.

13. (withdrawn) A method of machining a cylindrical workpiece according to claim 12, wherein said linear axis allows said effecting end to move perpendicularly or parallel to said final rotational axis.

14. (withdrawn) A method of machining a cylindrical workpiece according to claim 11, wherein said variable axis includes a rotary axis.

15. (withdrawn) A method of machining a cylindrical workpiece according to claim 11, wherein a linear axis and a rotary axis are provided, each functioning as said variable axis.

16. (withdrawn) A method of machining a pipe-like workpiece with a robot system comprising a movable arm including a plurality of links connected by joints and controlled by a robot controller having a software processing function, and a tool unit mounted on a distal end of said movable arm and having an effecting end and a variable linear axis for varying a position of said effecting end with respect to a final rotational axis of said movable arm, said method comprising the steps of:

(a) arranging the workpiece so that a central axis of the workpiece is aligned with the final rotational axis of said movable arm; and

(b) rotating said final rotational axis and driving said variable linear axis in synchronism with the rotation of said final rotational axis to perform a saddle-like cutting or forming a hole on the workpiece.

17. (new) A robot system, comprising:

a movable arm including a plurality of links and a wrist connected by joints and controlled by a robot controller having a software processing function; and

a tool unit mounted on said wrist at a distal end of said movable arm, and having an effecting end work point at which work occurs biased with a radial offset with respect to a final rotational axis of said wrist and directed to said final rotational axis.

18. (new) A robot system, comprising:

a movable arm including a plurality of links and a wrist connected by joints and controlled

by a robot controller having a software processing function; and

a tool unit mounted on said wrist at a distal end of said movable arm, and having an L-shaped member extending from a final rotational axis and an extension member attached to an extended end of the L-shaped member providing an effecting end point biased with a radial offset with respect to the final rotational axis of said wrist and directed to said final rotational axis.

19. (new) A robot system, comprising:

a movable arm including a plurality of links and a wrist connected by joints and controlled by a robot controller having a software processing function; and

a cutting tool unit mounted on said wrist at a distal end of said movable arm, and having an L-shaped member extending from a final rotational axis and a extension member attached to an extended end of the L-shaped member providing an effecting end cutting point at which work occurs biased with a radial offset with respect to the final rotational axis of said wrist and directed to said final rotational axis.
